

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/EP 03/06800

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 H04Q7/36

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 H04Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)  
EPO-Internal, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>WO 03/045094 A (METAWAVE COMM CORP) 30 May 2003 (2003-05-30) paragraphs '0012! - '0015! paragraphs '0039! - '0043! paragraphs '0046! - '0049! paragraphs '0052! - '0076! paragraphs '0080! - '0082! claims 1-5 figures 2A,3</p> <p style="text-align: center;">----- -/--</p>	1,7-14, 20

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*8\* document member of the same patent family

Date of the actual completion of the international search

8 April 2004

Date of mailing of the international search report

16/04/2004

Name and mailing address of the ISA

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**C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>WO 02/35872 A (FRANCALANCI INDRO ;STOLA LORIS (IT); BARBERIS SERGIO (IT); MAGNANI) 2 May 2002 (2002-05-02) page 1, lines 16-20 page 4, lines 18-25 page 7, line 3 - page 11, line 22 page 14, lines 17-31 page 18, lines 27-29 page 21, lines 16-20</p>	1,7-14, 20
A	<p>----- US 6 141 565 A (CRAWFORD THOMAS R ET AL) 31 October 2000 (2000-10-31) column 2, line 26 - column 4, line 13 column 6, line 64 - column 7, line 8 column 8, lines 15-26 column 10, lines 2-24 claims 29,42,49 figures 3,4 -----</p>	1,7-14, 20

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## Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 2-6, 15-19  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 2-6,15-19

Claims 2-6, 15-19 are so unclear that it is impossible to determine the scope of said claims:

The wording of claims 2-6, 15-19 and the corresponding part of the description do not allow to clearly define how the gain in each of the direction is calculated.

In claims 2 and 15, it is unclear how a gain can maximise a ratio (rbcpixel) which depends on the topography of the cell and the density of users and not on the antenna parameters.

Similarly, in claims 3 and 16 it is unclear what the cost function  $f(a_0)$  represents and how it can be optimised.

In claims 4 and 17, it is unclear what kind of optimisation function is defined.

Although claims 5 and 18 specify the function it does not allow when read in combination with claims 1 and 4 and 14 and 17 respectively, the skilled person to understand how this function is used to determine the gain.

In claims 5 and 18 as in claim 2 it is unclear how  $f(a_0)$  can be optimised knowing that the attenuation is dependent on the distance between the antenna and the coverage area and the topology of the area, and not on the antenna parameters.

In claims 6 and 19, there is no relation anymore between the gain and the traffic as stated in claim 1. In fact claims 6 and 19 suggest that the gain is directly dependent on the attenuation i.e. the maximum gain corresponds to the portion with the maximum attenuation and  $G_{mi}$  is only obtained directly from a simple subtraction using the value  $a_{mi}$ .

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/06800

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 03045094	A	30-05-2003	WO 03045094 A1	30-05-2003
WO 0235872	A	02-05-2002	IT T020001017 A1	29-04-2002
			AU 1519202 A	06-05-2002
			CA 2426930 A1	02-05-2002
			CN 1478361 T	25-02-2004
			EP 1329120 A1	23-07-2003
			WO 0235872 A1	02-05-2002
			US 2004014476 A1	22-01-2004
US 6141565	A	31-10-2000	NONE	